



New England
Deaconess
Hospital

Annual
Report
1978

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New England Deaconess Hospital

affiliated with

Harvard Medical School

fully accredited by

The Joint Commission on Accreditation
of Hospitals

Member of

American Hospital Association

New England Hospital Assembly

Massachusetts Hospital Association

Council of Boston Teaching Hospitals

American Protestant Hospital Association

Association of American Medical

Colleges, Council of Teaching Hospitals

International Union Against Cancer

Association of Cancer Institutes

Residency programs approved by

American Medical Association

Internal Medicine

Pathology

Podiatry

Radiology

Surgery

Thoracic Surgery

School of Nursing

fully accredited by

National League for Nursing

Massachusetts Board of Registration
in Nursing

School of X-ray Technologists

approved by

American Medical Association

School of Medical Technology

approved by

American Society of Clinical Pathologists

Blood Bank Training Center

approved by

American Association of Blood Banks

School of Radiologic Technology

affiliated with

Northern Essex Community College

School of Nuclear Technology

affiliated with

Bunker Hill Community College

New England Deaconess Hospital Complex

Cancer Research Institute

Shields Warren Radiation Laboratory

Lowry Medical Building

Joslin Clinic

Lahey Clinic

Overholt Thoracic Clinic

Meissner Laboratory

Patient Statistics

Number of beds 489

Patients admitted 14,500

Patient days 166,862

Average stay 11.5

Surgical procedures 6,860

X-rays taken 52,658

Radiation Therapy 12,438

Laboratory tests 700,735

Personnel Facts

Medical Staff 387

Basic research scientists 15

Residents 85

School of nursing enrollment 183

Total employees 2,484

Membership of Friends 466

(including 75 Life Members)

The New England Deaconess Hospital, renowned for its skilled, compassionate patient care is particularly well suited to caring for patients with complex, life-threatening diseases. People are referred from all over the world for treatment by the specialists on the staff of the hospital and its affiliated clinics. The hospital's highly trained personnel and specialized facilities are organized to assist patients suffering from diabetes, cancer, heart disease, kidney failure, and other complex problems.

This year's annual report takes you pictorially through the steps with one patient as she enters the Deaconess and goes through the process of admission, diagnosis, treatment and discharge.

Upon completion of blood work, x-rays, and an electro-cardiogram in the Admissions Laboratory, the patient is escorted to her room where she is prepared further for her hospitalization. A physical history is taken first by a nurse and then by a resident physician. The nursing assessment helps in determining daily nursing care and the physician's work up serves to assist in planning the program of medical treatment.

With the patient we are following, surgery is indicated and radiation therapy treatments are advisable as well. Such treatment methodology is often the case with many of our patients whose complicated physical problems require the interaction of several of our departments in the course of care.

It is our hope that this photo story together with the texts of the departmental reports will help each of you to visualize the work done at the Hospital and encourage your interest and support in its continuance.



The past year has been exciting and challenging.

Net operating revenues amounted to \$ 54,589,242. Expenses, while higher, were slightly under budget and after non-operating income and expenses we ended the year with a surplus of \$ 961,931. Our occupancy was very high at 93.7% and with the new Diabetes Treatment Unit beds in the Howard F. Root wing of the Joslin Diabetes Foundation in use for a full year, we achieved a record of 166,862 patient days during fiscal 1978.

While we should be pleased with these operating results which are attributable to sound management and a strong budget committee, one should recognize that our operating surplus was just barely sufficient to enable us to keep up with inflation and thereby maintain adequate working capital for fiscal 1979.

Meanwhile, we are continuing to struggle to find adequate funds to meet rising needs for our capital equipment and renovation budget. Today's medicine has a substantial stake in up-to-date tech-

nology. A substantial percentage of our patients come to Deaconess because of the excellence of our staff and specialized hardware. Thus, a specialty referral hospital such as the Deaconess must do its utmost to have the latest equipment if it is to continue to attract and keep top grade professional staff and deliver the very best diagnostic and treatment services to its patients.

Recognizing the need for increased capital funds, our Development Council, chaired by Hillard W. Welch, raised over \$215,000 for new equipment, thereby establishing a record. The Council also is working on the development of a bequest program, has been instrumental in developing a new corporate solicitation program and has assisted in strengthening our communications both internal and external.

Parking continues to be a major problem. Thus, we are pleased to report that



we were successful in obtaining a Determination of Need enabling us to proceed with the planned addition to our Pilgrim Road Garage. This much needed addition of 345 parking spaces for our patients, visitors and employees was placed under contract at a project cost of \$1,700,000 early in the spring. Construction is proceeding at a rapid pace and barring unforeseen delays we expect to start using the lower levels in November and have the entire project completed in mid December, prior to the onset of winter weather.

We are also pleased to report the relocation and completion of renovations to our Observation and Ambulatory Care Units on Deaconess One. This project has enabled us to relocate our ambulance entrance so that patients can be brought directly into the Observation Unit and from there sent to the appropriate unit within the hospital. The new unit will also permit us to go forward with plans to increase our surgical day care volume.

With the State and Federal governments underwriting an increasing share of the nation's medical and hospital bills, the health care industry is beset with increasing encroachment by regulation. This is particularly difficult for a hospital with Deaconess' standards. This pressure has been exacerbated by the increasing costs of health services. There is little doubt that the traditional methods of health care delivery are undergoing close scrutiny and that major changes will likely occur during the next decade. It appears that we are entering uncharted waters.

With these thoughts in mind, our Long Range Planning Committee has had an active year studying multi-institutional models of health care delivery and the potential impact of Health Maintenance

Organizations. Cost effective delivery systems are uppermost in the minds of both the regulators and planners. We must, therefore, be alert to such possibilities if we are to maintain our preeminence as a major referral hospital. As a result, we have had a number of conversations with nearby institutions.

Two search committees have been active during the past year. One committee concluded its mission, recommending the appointment of Doctor Bradley E. Copeland as Chairman of the Department of Pathology to succeed Doctor Merle A. Legg who completed his term as Chairman in June. The other was appointed during the winter to find a successor to Doctor James L. Tullis, Chairman of the Department of Medicine, who will reach retirement in 1979.

We are very pleased to report the establishment of a Lectureship within the

Department of Surgery in memory of Francis W. Capper who served the Deaconess in many capacities for over forty years. This lectureship has been funded by gifts from Francis' many friends and will cover the expenses involved in bringing a distinguished visiting professor to the hospital for one week each year.

During the year, two Trustees resigned: Doctor James W. Kelley, having served the hospital loyally for 11 years, has retired to New Hampshire; and Mrs. Karen N. Horn has moved to Philadelphia to assume the Treasurership of Pennsylvania Bell Telephone Company. They have both served on our Long Range Planning Committee and have been active Board members. We will miss them very much. Also, we regret that under our Bylaws, this past year was the last that F. Thayer Sanderson could serve as Treasurer.

This report would not be complete without acknowledgment of the retirement of C. Vincent Vappi as our Chairman after five very busy and eventful years. Under his leadership we completed three major building projects costing ap-



proximately \$15 million; our Board of Trustees was reorganized and its Bylaws revised; and our fiscal policies were reviewed and updated in the light of current financial requirements. We are pleased Vince will be remaining on the Board and continuing to play an active role as a Trustee.

The Deaconess is fortunate to have a large number of people loyal to our hospital and concerned for our patients. We wish to thank them, for they in turn make the Deaconess the fine institution it is. Moreover, their continued support will be vital in meeting the challenges in the years ahead.

James F. Farr
Chairman of the Board

Laurens MacLure
President

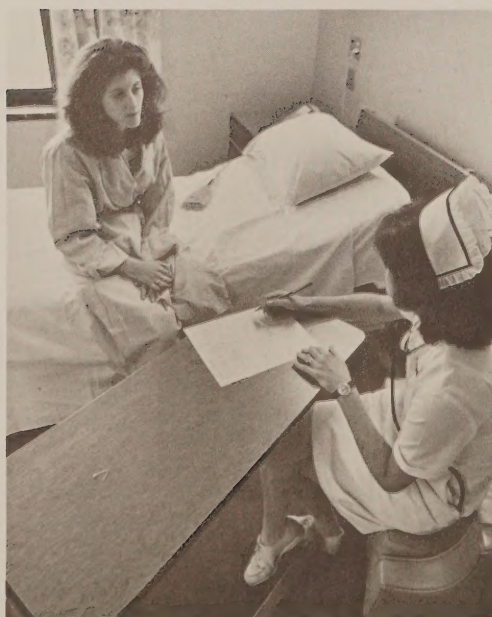
Because at the Deaconess we are aware that each patient has special and distinct needs, I would like to emphasize the Department of Medicine's interactions with other hospital departments in the daily process of total patient care.

Clinical Departments: One of the greatest privileges of working within the Deaconess is the exceptionally high quality of professional consultants from each of the clinical departments. When interviewing applicants for the Medical Residency Training program, it is a pleasure to point out that the quality and facility of laboratory information, radiology procedures and surgical consultation surpass the standards which obtain in essentially any Boston hospital. A house officer quickly comes to know and to respect the importance of this in patient care as well as in his own education. A weekend consultation or procedure from any department is fulfilled with the same speed and understanding as that of a standard day.

Chaplains: A tertiary hospital like the Deaconess derives a high proportion of its patients from remote geographic areas. In

the absence of the usual support of community friends and pastors, it is essential that the hospital make available a staff of dedicated clergymen. The hospital chaplains, drawn from nearly all denominations and faiths, have proved of tremendous assistance to the physicians in their care of acutely ill as well as terminal patients. The clergy have been willing to lend their presence at anytime to concerned families as well as to the sick themselves. They have fully established their important role as members of the health care team and have made possible the administration of total healing in its broadest sense. They have contributed also to the education of interns and residents by helping to instruct in the fragile relationship of doctor to patient and by making the physician more aware of his own reflection and attitudes.

Social Service: As part of the effective control of health care costs, it is essential to mobilize patients promptly when their



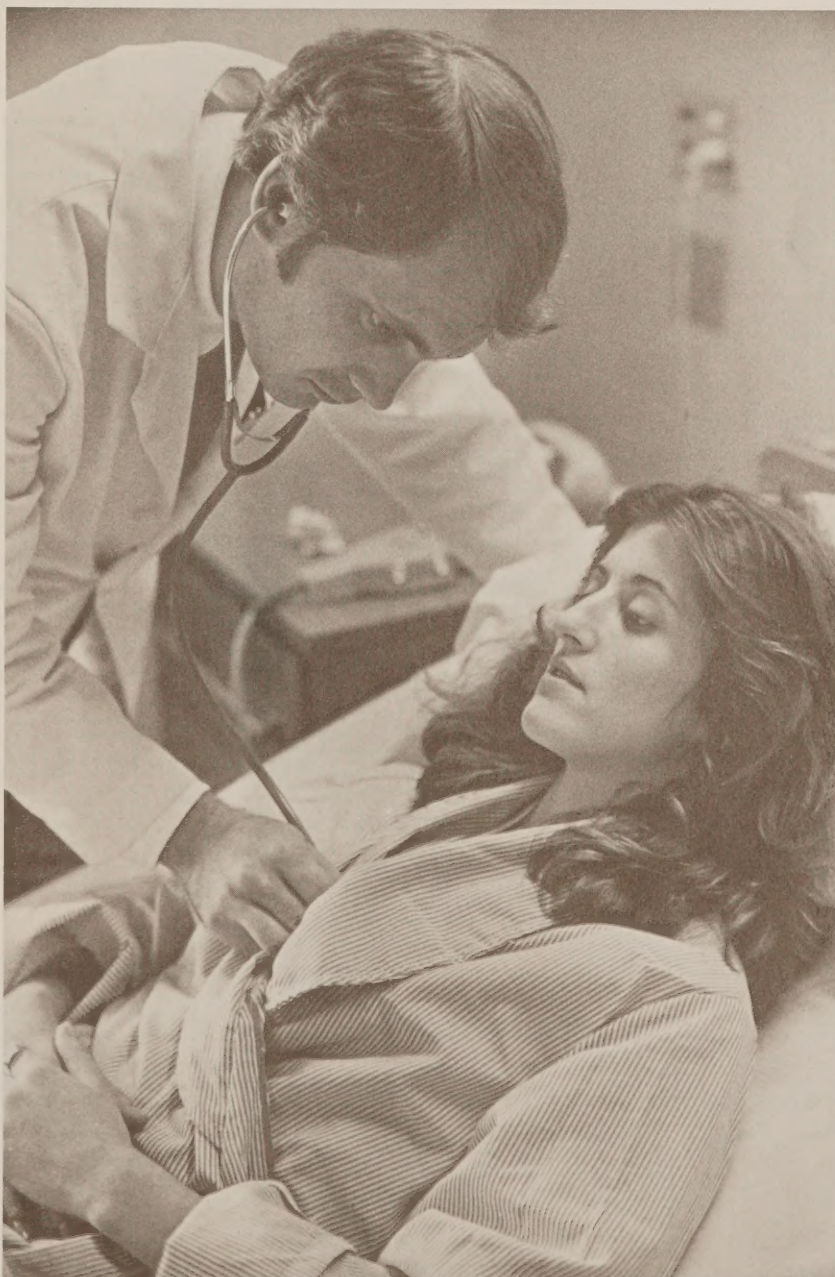
illness reaches a stage that permits transfer out of an acute care facility. The broad contacts which the Social Service Department maintains with all categories of continuing care permits expeditious mobilization of medical patients. Through their many other support services, they amplify continually the care originally delivered by the physician and thus speed the overall rehabilitation process.

Quote Tuller et al
Nursing: The interrelationship of physicians and nurses is gradually shifting as the complexity of modern medicine increases. The role of the nurse is no longer the perfunctory implementation of a doctor's orders but rather has become that of a fundamental contributor to overall therapy. This is best exemplified in special areas of the hospital. Many young nurses in facilities such as coronary care or intensive care have a knowledge of cardiac physiology and respiratory support that equals that of physicians who were schooled in an earlier era or who have devoted their professional activities to other areas of care. This paradox has the potential to lead to conflicts and hostility unless the highest levels of interpersonal relationship are maintained. It is a credit to the nurses and physicians of the Deaconess that conflicts have rarely occurred and the total concern has been pointed to what is best for the patient rather than what assures personal status. The eventual role of a single physician as the responsible individual for a single patient remains essential. Health care cannot be prescribed by committee but must remain the province of one individual. To maintain this orderly progression, however, the perceptive physician has learned to accept willingly the valued advice and suggestions of all members of the team and to accept the premise that in some circumstances other persons may be more skilled than himself.

Other Departments: Many other hospital departments that do not impact on physicians at the bedside are nonetheless essential to the delivery of modern

care. Without the services of a skillful Dietary Department, Pharmacy, Record Room, Library, and many additional divisions, a physician's attempt to heal his patient would at best be incomplete and discomforting. The quiet and efficient work which each division renders behind the scenes rarely reaches the attention of patients and staff except when a breakdown occurs. We are indebted to their continuing contribution to the hospital's whole effort.

Future Trends: As the hospital has continued its move into the maelstrom of a modern medical center, it is of increasing importance for all segments of the staff continually to recall the factors which have made this institution outstanding. The Deaconess has always emphasized the quality of its patient care and has achieved distinction largely through this. All of the diverse programs of education, research, new staffing and facilities only



have a role here so long as they amplify this premise. It is likely that the pragmatism of governmental influence and economic involvement by third party carriers will attempt continually to influence current methods for the delivery of patient care. Outside regulators already control the type of disease suitable for hospitalization, the duration of hospitalization and sometimes the type of therapy which may be rendered. It behooves the professional staff to acquaint their patients and consumers at large with the importance of retention of a medical system that permits individual relationships between a physician and his patient. It further should be the concern of physicians to guard against the excessive absorption of technical knowledge into the arena of therapeutics any time it displaces the equally important emotional and sociologic support which must be given to sick patients. We are privileged at this institution to have individuals who are cognizant of these long-standing ideals. The future appears to be in good hands.

James L. Tullis, M.D.
Chairman
Department of Medicine

The number of examinations performed this year was 52,000, the same as 1977. Leveling of the number of examinations has resulted from utilization review, state and Federal regulations, and physicians' attempts to contain costs; this trend has been observed in radiological facilities across the country. Changes in utilization have included a decrease in routine survey examinations on comparatively healthy patients and an increase in more sophisticated and time-consuming studies.

More sophisticated studies require a greater investment in technology as well as technical and professional staff and thus increase the overall cost of radiologic examinations. For example, prior to the advent of advanced imaging methods, most radiology departments could offer only cranial radiographs for the diagnosis of neurologic disease. Now, selective arteriography with magnification, radionuclide brain scans, and computed tomographic examinations are available in most large hospital x-ray departments. These highly specialized procedures re-

quire the service of a neuroradiologist, and we have been fortunate to have Dr. Daniel H. O'Leary join the radiology staff to head our Section of Neuroradiology. Dr. O'Leary trained at the Massachusetts General Hospital and is board certified in both neurology and radiology. He will act as consultant to the neurologists and neurosurgeons and be responsible for teaching neuroradiology at the hospital.

The profusion of imaging modalities in neuroradiology has also occurred in the other subspecialty sections of radiology, requiring section chiefs for ultrasound, nuclear medicine, angiography and special procedures. Other members of the radiology staff have developed special interests in gastrointestinal, genitourinary, pulmonary, and bone radiology.

The training program has been broadened to include one third-year and two first-year residents. Eventually there will be a total of six residents, two for each year of the three-year program. The training of residents has also become more time-intensive over the past decade with addition of the new subspecialties. The residents are given daily lectures by the radiology staff for the first three months while at the same time reading extensively in the subdivisions of general radiology (such as pulmonary, gastrointestinal, genitourinary, and bone). At the end of three months, they begin interpreting radiologic studies, which are reviewed throughout their training by the senior radiology staff so that every examination has a double interpretation. This improves patient care by decreasing the possibility of overlooking an abnormality. In the second and third years, the residents study neuroradiology, ultrasound, pediatric radiology, nuclear



medicine, angiography and special procedures. The combination of complex technology and teaching necessarily results in increased costs, a problem which all specialty teaching institutions are facing.

Since Dr. Florencio Hipona joined the department in 1977 to head the Section on Ultrasound, we have offered fellowships in that field. This program allows practicing physicians to spend one to eight weeks in the department to learn the latest technology and diagnostic techniques. The program at present is over-subscribed with fellows coming from all over the United States and Australia.

Members of the radiology staff have had numerous publications accepted from the clinical research projects carried out in the hospital and have been invited to speak and participate in numerous state, national and international meetings throughout the past year.

In summary, the department's goals are to continue the research and teaching activities as well as to deliver the excellent patient care and service for which we are noted. We will also strive to contain the spiraling costs of medical care in an era of capital-intensive technology and subspecialization by helping our colleagues determine the safest, most effective, and most accurate means of solving diagnostic problems.

Melvin E. Clouse, M.D.
Chairman
Department of Diagnostic Radiology



Since its founding by Dr. Shields Warren in 1927, the Department of Pathology has been regarded by the medical community as a reference center for diagnostic assistance. During the first two decades, diagnostic surgical pathology and radiation were the main foci of preeminence.

As we review our role as a reference laboratory center in 1978, we note the continuation of this development. We find that in parasitology we serve as a center for both teaching and referral of specimens. In clinical chemistry, our expertise is used by the National Bureau of Standards, by several national USA medical professional societies, and by two international standardization programs. In microbiology, we serve as a center for the diagnosis of *Mycobacterium tuberculosis*, as well as the diagnosis of the atypical mycobacteria. Our anaerobe laboratory is also used as a referral center. Our expertise in hematology is presented several times a year at workshop training pro-

grams which reach several hundred laboratory directors. In addition, we serve as consultant to the Massachusetts Society of Pathologists Statewide Hematology Quality Control Program. Analysis of coagulation factors is utilized by several hospitals for hemophilia patients who need surgery. In blood banking, our collaboration with the New England Baptist Hospital enables us to provide patients in both hospitals with increasing protection in case of transfusion compatibility problems. We supply back-up reference blood bank service for several hospitals. In cytology, our referrals come from the large clinics, as well as from many individual physicians. Anatomic Pathology, in addition to its large consultative service for pathologists throughout the world, also receives referrals for electron microscopy and non-decalcified bone sections.

Therefore, the entire Department of Pathology, in preparing to meet the many demands of the critically ill within our own patient population, also provides assistance to many patients in other institutions.

In emphasizing this year the extent of our consultative and referral services, we should not overlook the fact that our educational programs in physician residency training, in the training of medical technologists, in the training of cytotechnologists, in the training of blood bank specialists, and in the workshop training programs for pathologists and medical technologists throughout the United States, have continued.

Within the laboratory, we are busy developing new tests, such as new techniques for classifying the lymphocyte which controls body immunity; institution of several tests which relate to too-fast blood clotting.

In chemistry we are developing new techniques for measuring miniscule amounts of antibiotics and other drugs.

Microbiology is beginning to isolate viruses for the first time.

In the blood bank we now transfuse the protective white blood cell with almost as much ease as the red blood cell.

Anatomic Pathology has increased its potential in the neuropathology area and has kept in the van of increasing sophistication in the special areas of the esoteric problems that find their way to the Deaconess. Some efforts are accomplished cooperatively with other institutions. The capability in neuropathology and especially muscle disease has expanded considerably in the past year and includes some institutional sharing.

We wish to thank and to wish all the best to Dr. Dwight Lambe and Dr. Virginia H. Ross who left our staff this year after making valuable contributions to our progress.

Bradley E. Copeland, M.D.
Chairman, Department of Pathology



The newest member of the surgical health care team at the New England Deaconess Hospital is the Physician's Assistant. We will be seeing more Physician's Assistants at the Hospital so I want to introduce you to their role in patient care.

Physician's Assistants are not doctors in medicine or registered nurses, although nurses can become Physician's Assistants. As defined by the American Medical Association:

Physician's Assistants are members of the professional health care team qualified by academic clinical training, who function in a newly expanded medical support role to the physicians in the provision of medical care and who work under the direction, supervision, and responsibility of a physician in accordance with policies established in the Medical Staff Bylaws. They exercise judgment within their areas of competence and participate directly in the medical care of patients under the supervision or direction of a member of the medical staff, performing functions to the extent delineated by the medical staff.

Under Massachusetts law, a requirement for legitimate employment of a Physician's Assistant is that the individual be gradu-

ated from a program approved by the Massachusetts Board of Approval and Certification of Physician's Assistants Training Programs. Also mandatory is the accreditation of the program by the American Medical Association.

At the New England Deaconess Hospital, PA's qualifications must be approved by the Committee on Staff Membership, the Medical Administrative Board and finally the Board of Trustees. PA's may take the patient's history, do the physical examination, do certain technical diag-

nostic procedures and write routine orders which must be countersigned by the attending surgeon. They may assist the surgeon in the O.R. They function at a technically oriented non-judgmental level. Their purpose presently at the Deaconess is to unburden the surgeon of certain routine work.

Physician's Assistants are being hired currently in the New England Deaconess Hospital by the neurosurgeons. Neurosurgical societies, recognizing that there is a great surplus of neurosurgeons as there





The Hospital's new ambulatory care unit allows patients who need minor surgical or diagnostic procedures an alternative to a traditional hospital stay. Admitted in the morning they are prepared for surgery, wheeled to the operating suite, and after a brief stay in the recovery room are returned to the ACU. Patients accompanied by a friend or family member are then discharged later the same day.

are in a number of other surgical specialties, have determined to reduce the number of residents being trained in this country. So in many centers Physician's Assistants are being used to replace residents. Our neurosurgical staff, faced with this problem of a shortage of residents, have decided to use the same solution. Dr. Charles Fager, who has been using a Physician's Assistant at the New England Baptist Hospital for several months, has assured me that he is extremely pleased with this arrangement and feels strongly that it has been a movement in better patient care.

We must keep in mind that Physician's Assistants are not doctors of medicine and a number of responsibilities cannot be given to them. They cannot be responsible for judgmental problems or decision-making. We plan to watch carefully their progress within the Neurosurgical Department and use this experience as a testing ground for developing guidelines for Physician's Assistants whom we may use in other surgical specialties.

Cornelius E. Sedgwick, M.D.
Surgeon-in-Chief

My term as President of the Friends of the Deaconess, Inc. has been a challenging and stimulating experience. Looking back over the years since 1931 when the Women's Service Committee incorporated the Friends, we have made many financial contributions to the hospital in addition to our many volunteer working hours.

We have tried to strengthen our volunteer group activities to assure a solid foundation on which to build in the years ahead and we have assigned a chairman of each activity to help achieve this, thus diversifying interest and getting major results because of the "one-person" action head.

To generate growth through our volunteer activities, we recognize the importance of new ideas, of suggested new projects, of membership expansion to increase interest in our efforts to be of greater service to the New England Deaconess Hospital. Our stronger volun-

teer programs this year received recognition from the Voluntary Action Center of United Community Way for meeting the standards for organization utilizing volunteers.

Today we have about 466 women members of the Friends, approximately forty of whom serve on the Board of Directors. Women make incredibly good business people, and it is this ability, support and guidance which has been the key element in the achievement of our programs.

Mrs. George A. Dempsey
President
Friends of the Deaconess



Libraries?

This has been the tenth year of the Joint Center for Radiation Therapy. During this last year, 2178 new patients were seen. This represents a 2% increase in new patients. Distribution of these patients by Joint Center hospitals is as follows:

Beth Israel Hospital - <i>LIB</i>	487
Boston Hospital for Women - <i>LIB?</i>	183
New England Deaconess Hospital	609
Peter Bent Brigham Hospital	377
Children's Hospital Medical Center	214
Sidney Farber Cancer Institute - <i>LIB?</i>	204
Faulkner Hospital - <i>LIB</i>	104

Dr. Arnold Malcolm has joined the professional staff of the Joint Center for Radiation Therapy. Dr. Malcolm completed his residency at the Joint Center and, for the past year, has been primarily at the New England Deaconess Hospital. Dr. James Bruckman completed his residency training at the Joint Center for Radiation Therapy and has joined the staff of the Mayo Clinic. Dr. Steven Carabell completed his residency training at the Joint Center and has joined the Department of Radiation Therapy at the University of Pennsylvania School of Medicine. In July, seven new post-doctoral trainees entered the radiation therapy training program, making the number of residents and fellows fourteen. The collaborative program in Radiologic Physics and Health Sciences, which is run under the joint auspices of the Harvard School of Public Health, Massachusetts Institute of Technology and our Department of Physics and Engineering, currently has fourteen students. There are ten technologists in training in our Radiologic Technology Training Program. The currently available physical facilities of the Joint Center are being used at capacity. This is reflected in the large number of patients being treated as well as the complicated treatment techniques currently being employed. Our clinical research program emphasizes the treatment of a variety of diseases, but the common theme of all these advances is highly sophisticated individualized and detailed treatment. The result of such treatment, we believe, is an improved cure with a diminished likelihood for complications.



This requires significant commitment of the already stretched resources. The Lennard Hill Research Data Resource has been developed this year. Through the generosity of the Hill family and many other friends of the Joint Center, we have developed a computer based information system which allows

clinicians and scientists immediate access to the current pertinent medical and scientific literature. This interaction allows more information immediately available for the solution of complicated medical and scientific problems and, we believe, will improve both patient care and research in the Center.

The research productivity of the Joint Center has resulted in a number of scientific publications, which are included in the appended bibliography. Clinical research emphasized the role of radiotherapy in the primary management of breast cancer. The number of patients being treated with this new technique has markedly increased. This treatment avoids loss of the breast while still treating the cancer. The results of this treatment, thus far, are encouraging both in terms of the local control of disease as well as the cosmetic evaluation. These results are being better known through the medical community at large and, we believe, are changing attitudes toward breast cancer management. Studies on Hodgkin's disease and the non-Hodgkin's lymphomas continue with a special emphasis on how drugs should be combined with radiation in the best management of these diseases. Interest in the interdisciplinary management of pediatric tumors continues. This year we have begun some multimodality trials of advanced gynecologic malignancies. The clinical research evaluation attempts to

quantify the results of treatments in terms of survival and in terms of the disability and morbidity they produce. The method being developed considers patient input in determining management decisions.

The biologic laboratories of the Joint Center have been quite productive during this last year. These activities are housed in the Shields Warren Radiation Laboratories of the New England Deaconess Hospital, the Sidney Farber Cancer Institute and the Harvard School of Public Health. The mechanisms by which cells develop resistance to the drug adriamycin as well as a detailed characterization of resistant cells has been studied. Interesting and important studies in the production of leukemia by viruses are being actively pursued. We believe this project may give insight into the mechanisms by which leukemia and lymphomas are caused in man. Studies of the way in which cells repair radiation damage and the importance of these mechanisms continue. Emphasis in this last year has been on studies of rapid repair processes and how DNA repair, in general, is related to those human genetic diseases associated with a predisposition in malignancy. These studies may have important fundamental biologic significance. A continued emphasis has been in the study of the normal hemato-poietic system. These studies in both animals and in tissue culture are directed toward understanding the proliferative capacity of this important organ and how it is modified by a variety of conditions, especially chemotherapeutic agents. The mechanisms by which tumors metastasize are being actively investigated in the laboratory with specific concern to how these are related to cell surface and immunologic parameters. Breast cancer growth can be modified in the clinic by the use of hormones. The mechanism by which this occurs is being studied and at-

tempts to greatly increase the efficacy of hormones in the treatment of tumors by using these agents as carriers of toxic amounts of radioactive isotopes. The genetic effects of radiation and drugs on germ cells are being studied using the frequency of induction of histocompatibility mutations. These studies are important both to immunology, transplantation biology and determining the basic risk of environmental mutagens. The Division of Physics and Engineering continues its extensive research on computer-controlled radiation therapy using the mevatron 12 linear accelerator at the New England Deaconess Hospital. During this last year, patient treatment using this technique has begun. Such treatment has resulted in the development of radiation therapy plans allowing increased radiation to the tumor without excessive irradiation of normal tissues. During this first clinical year, only the simplest plans have been used, and it is expected during this next year to increase their complexity in a greater concentration of radiation in the tumor volume. Computerized tomography specifically for radiation therapy planning is being actively investigated. Both of these programs are part of a collaborative venture of the Department of Physics and Engineering and the Massachusetts Institute of Technology. Continued concern with accurate radiation dosimetry in the reduction of radiation exposure for hospital personnel has been a continued and important research objective.



In summary, patient care, education and a multi-faceted research program continue to be major activities of the Joint Center for Radiation Therapy. These research programs extend from basic biologic observations of the mechanism of tumor induction, mutagenesis and genetic repair to clinical investigations concerned with improving the survival and function of patients with cancer while reducing damage to the normal tissues. Such research requires the development of physical methods, understanding of basic biologic processes and the appropriate application of these to the patient. This latter must be done for the full realization of these research activities.

Samuel Hellman, M.D.
Director

A broad range of investigative work in the radiological sciences is conducted at the Shields Warren Radiation Laboratory. On the third floor, the Department of Radiology is engaged in a wide variety of studies, but the major focus involves the assessment of the vascular system. Current studies include examination of the recruitment of a blood supply by tumors; humoral factors in the genesis of a collateral arterial blood sup-

ply; the characteristics of the coronary, renal and gastrointestinal blood supply in a number of disease states; the characteristics of lymph nodes in response to immune mechanisms, tumor metastasis and xanthomatous processes; functional characteristics of major arteries involved with atherosclerosis. In addition, active research into improvements at the technical level of diagnostic angiography are being performed. These have as their



special focus the assessment of the blood supply of animal tumors.

Experimental Nuclear Medicine Laboratory efforts are devoted to the basic effects of ionizing radiation on cellular constituents, to the fundamental chemistry of the radionuclide most commonly used in medical practice, and to the radiobiological consequences of radioactive decay. Radiation effects are being observed in chromatin, the genetic material of the cell which is the prime radiation target. The chemistry of technetium-99m is being unraveled with collaborators from the Department of Chemistry at MIT, and the first crystalline structure of compounds containing this element have been obtained. The microscopic distribution of short-range electrons and alpha-particles emitted by radioactive substances is being studied in the hope that they may be directed specifically at cancer cells, sparing normal ones. Lastly, the use of radionuclides for the study of human enzymes and the applications of radioimmunoassay to disease are being extended.

Radiation Biology The studies of the radiation biology group, under Dr. Henry I. Kohn, fall under two general headings—the induction of mutation in the mouse by ionizing radiation and chemicals, and the use of mutant genes in immunological research. It had been found in this program that a large block of genes (the histocompatibility genes that control the acceptability of tissue transplants from one animal to another) appear to be much less sensitive to X-ray induced mutation than reports for other genes indicated. Possible reasons for the difference are under investigation. It had been suggested that the low rate might be specific for immature germ cells (spermatogonia), but not of mature ones (sperm). The trend of present experiments does not support this explanation. Other work in progress



relates to the induction of mutation and to protection against mutation by chemicals.

As a contribution to the methodology of immunological research, the group has been studying the spontaneous mutation rate of the histocompatibility group of genes. When found, mutant genes are "isolated" by establishing them in separate lines of mice, which can then be compared with the original lines. Such mutant lines appear to be normal. There mutant genes, however, provide useful markers for following what otherwise might be hidden steps in the immunological process. As a result of general interest in the use of such mutants, the First H-2 Mutant Workshop was held last May at Woods Hole, with the support of the National Institute of Allergy and Infectious Diseases and of the National Cancer Institute.

Mutant lines have been supplied to other laboratories for use in various types of experiments. One laboratory is embarked on a program of isolating mutant genes in the test tube, and then determining the mutant gene's structure. Since our collection contains a half dozen different mutations that have occurred in one gene, it should be possible to correlate specific small changes in chemical structure with changes in that gene's function.

Henry I. Kohn, M.D.
Director

*Mac-
miller*



Increasing consolidation of cancer related activities and research in the Cancer Research Institute has made the need for additional space more evident during the year, and plans to build an additional wing to the building advanced by the end of the year to the stage that a Research and Training Project Notice of Assurance was submitted to the Department of Public Health in accordance with Massachusetts Determination of Need Regulations. The new wing could begin early in 1979, after approval from the Department of Public Health.

During the year, Dr. Olga Greengard left the Institute for a new position at Mount Sinai Hospital in New York City and her Growth Laboratory became a new Mammalian Differentiation Laboratory, under Dr. Annemarie Herzfeld. The research of the laboratory focuses on biochemical changes in tissues during normal development and on the reversal of mature enzyme patterns in tissues of cancer hosts. Studies involve samples of human tissues and materials from normal and cancer-bearing rats.

Biochemistry Under the leadership of Dr. W. Eugene Knox, the laboratory has continued its research on the chemical nature of cancer and on the control of the machinery of the cells during development and disease.

The Cancer Research Institute is the source of one of the small number of strains of pedigreed rats upon which the world's biological science depends, the NEDH/Kx rats developed in the department. A mutation in them producing something like psoriasis is now available for study.

Two international scientific journals are edited in the department and seven scientific papers published during the year described the nature of the research being done.

Clinical Studies Under the direction of the Scientific Director of the Institute and with the able help of Dr. Albert Bothe, research is continuing in the multidisciplinary study of early diagnosis of pancreatic cancer. As part of the National Cancer Institute's Pancreatic Cancer Project, the study is in its third year of evaluating clinical and biochemical information which might signal the presence of pancreatic cancer. Cooperation among several departments of the Hospital, the Institute, and the Mallory Institute of Pathology allows correlation of the radiologic, endoscopic and pathologic findings with newer biochemical determinations.

Experimental Pathology Directed by Dr. Shields Warren, Experimental Pathology, supported by the Department of Energy and the National Cancer Institute, has continued its studies of radiation carcinogenesis and added studies of the effects of nonionizing (radar) radiation. The effects of asbestos fibers when absorbed within the body are also being investigated. We have demonstrated that radiation can cause benign tumors as well as causing the better known cancers.

Radiation-induced transplantable endocrine-secreting tumors of rats produced by the laboratory have continued to be of value to experimentalists. Cells of the rat tumor producing insulin have been used in genetic engineering experiments by

the Joslin Clinic and the Harvard Department of Biology.

Cooperative research, guided by Dr. Clark E. Brown, with the Harvard Laboratory of Human Reproduction and Reproductive Biology has focused on the role of the pituitary hormone, prolactin, in producing mammary tumors in rats.

Medical Oncology The Department of Medicine's activity within the Cancer Research Institute, Medical Oncology, under Dr. Jacob Lokich, has assumed responsibility for the development of programs in three major areas. In the area of primary patient care, the Department has coordinated the development of an integrated oncology nursing staff for the administration of therapy and supervision of patient education as well as developing the expanded support services in the specific areas of family counseling via group therapy, cancer pain management teams, and on the drawing board, anti-emetic programs. In education, the Department has functioned in a central role in the development of the Hospital's annual Cancer Symposium and this year activated an ongoing two-year comprehensive course in cancer biology and therapeutics. Medical oncology staff physicians have formulated a continuing education service for the house staff and resident physicians. Finally, clinical therapeutic trials employing new combination chemotherapy program and other therapeutic approaches such as anti-estrogens are underway in the area of lung cancer, prostate cancer, and breast cancer. In addition, adjuvant trials in the areas of breast cancer, colorectal cancer and gastric cancer are ongoing in collaboration with the Sidney Farber Cancer Center. Natural history studies of sarcomas with the Tumor Registry and of coagulation

parameters in malignant disease with Hematology have been activated, and a study of carcinoembryonic antigen is in the process of development with the Department of Pathology.

Nutrition An integrated study of the interaction of nutrition and illness continues under the direction of Dr. George L. Blackburn and Dr. Bruce R. Bistrian. The clinical delivery of nutritional support is augmented by detailed nutrition laboratory studies of the metabolic response associated with various disease states. A collaborative arrangement with M.I.T. Department of Nutrition and Food Services provides additional expertise and in conjunction with Children's Medical Center, University Hospital, Massachusetts General Hospital, and Shriners' Burn Center serves a teaching function for postdoctoral clinical nutritionists.

Recent clinical studies have shown that weight loss and cachexia are an under-recognized and under-treated aspect of cancer management, which may contribute to the complications of oncologic therapy. Techniques for assessment of nutritional status, surveillance, and nutrient delivery have been developed for cancer patients receiving radiotherapy, chemotherapy, and surgery.

The basic research of the unit is directed at the protein and energy aspects of cell metabolism. The results have been rewarding in providing an understanding

of the alterations of protein metabolism during illness and injury. Of particular interest are patients with infection, liver failure, and renal failure. Newer investigations have begun into the long-range benefits of nutritionally-oriented health maintenance programs.

Transplantation and Immunology Under the leadership of Dr. Anthony P. Monaco, studies were continued on the mechanism involved in the prolongation of skin allografts achieved in mice treated with antilymphocyte serum and bone marrow. Experiments have been completed examining the use of platelets as a source of antigen instead of marrow for the induction of specific unresponsiveness in antilymphocyte serum treated mice.

A rabbit antibody has been prepared to a partially purified urinary bladder tumor antigen. Data resulting from this work suggest that quantitative antigenic differences may exist between infected and cancer urine which may be important in the early diagnosis of bladder cancer.

Tumor Registry The Tumor Registry, under Dr. W. Eugene Knox, is an automated listing of every patient with a neoplasm cared for at the Deaconess Hospital. A range of information about the patient, his disease and treatment is recorded. The American College of Surgeons requires such a listing for hospitals with a recognized cancer program and has fully accredited that of the Deaconess. Its use is twofold: to insure appropriate clinical followup of each case and to provide overall statistics for planning and research. During this year the followup was documented for well over 90% of all patients seen since 1965. This is done from a computer listing of patients on the anniversary of diagnosis. The Registry now contains 16,308 cases.

Listing of a person to be followed is then automated; the actual followup is not. Information must be found, checked, recorded and rechecked by people. Essen-

tial human contributions of accuracy, judgment, and imagination are provided by dedicated Registry workers supervised by Marion H. Sciarappa, who is also Vice President and Membership Chairperson of the Tumor Registrars Association of New England.

Research Administration

Office of Grants and Contracts Continuing efforts on the part of the Institute and the Department of Medicine, Radiology, and Surgical Services to obtain increased funding resulted in the Office's assisting in the preparation of budgets and applications for 20 grants and contracts. The Office is currently managing 19 active grants and contracts awarded from six federal and private agencies in the amount of \$1,000,000. (CCCEP)

Protocol Office Responsible for administering the activities of the committee on Clinical Investigation and the Cancer Committee, the protocol office coordinates the weekly Tumor Conference, Tumor Board, and the yearly post graduate Cancer Symposium which focused this year on primary care medicine and cancer management. Over 85 new clinical research protocols, including 17 on investigational new drugs, were processed for approval, and continuing review was maintained over 50 ongoing studies. The Tumor Board census yielded data on over 1,100 new cancer cases.

Compliance with DHEW, FDA, and the American College of Surgeons requirements was maintained, and following an FDA site visit in January, the Deaconess was placed in the top rank for compliance with that agency's regulations.

William V. McDermott, M.D.
Scientific Director



Balance Sheets

September 24, 1978 and
September 25, 1977

Assets

Unrestricted Funds		1978	1977
Current Assets:	Cash and invested cash equivalents:		
	General	\$ 3,266,403	\$ 492,130
	Plant replacement and expansion	1,793,624	1,544,045
	Mortgage payment funds held in trust (Note 3)	450,000	450,000
	Accounts receivable—less allowance of 1,277,242 in 1978 and \$1,110,095 in 1977 for uncollectible accounts	8,765,527	7,792,174
	Inventories of supplies—at cost	560,490	492,078
	Prepaid expenses, etc.	569,147	498,156
	Total current assets	15,405,191	11,268,583
Trustee Designated Funds:	Cash and invested cash equivalents	31,318	
	Investments (market value: 1978, \$343,000; 1977, \$243,855) (Note 1)	332,631	238,774
	Total trustee designated funds	363,949	238,774
Funds Held in Trust—	Cash and invested cash equivalents (Note 3)	1,898,186	1,764,543
Property, Plant, and Equipment—	Net (Notes 2 and 3)	32,967,886	32,206,545
	Total	\$50,635,212	\$45,478,445
Restricted Funds			
Special Purpose Funds:	Cash and invested cash equivalents	\$ 137,642	\$ 77,329
	Investments (market value: 1978, \$752,000; 1977, \$689,362) (Note 1)	737,730	673,989
	Grants receivable	803,557	778,251
	Total Special Purpose Funds	\$ 1,678,929	\$ 1,529,569
Endowment Funds:	Investments (market value: 1978, \$3,382,000; 1977, \$3,100,377) (Note 1)	\$ 3,250,830	\$ 3,038,649
	Real estate, equipment, and furnishings— at cost, less accumulated straight-line depreciation: 1978, \$1,514,966; 1977, \$1,379,393 (Note 4)	3,987,246	4,030,170
	Total Endowment Funds	\$ 7,238,076	\$ 7,068,819
Plant Replacement and Expansion Funds:	Cash and invested cash equivalents	\$ 18,861	\$ 208,212
	Building Fund pledges receivable	52,739	115,925
	Total Plant Replacement and Expansion Funds	\$ 71,600	\$ 324,137

See notes to financial statements.

Liabilities and Fund Balances

<i>Unrestricted Funds</i>		1978	1977
<i>Current Liabilities:</i>	Accounts payable and accrued liabilities	\$ 5,297,462	\$ 4,566,196
	Accrual for settlements with third-party payors (Note 1)	2,632,518	438,939
	Current portion of long-term debt (Note 3)	450,000	450,000
	Deferred nursing school tuition	467,494	432,248
	Advances from third-party payors	359,611	424,255
Total current liabilities		9,207,085	6,311,638
<i>Deferred Revenue— Long-Term Debt (Note 3)</i>	Third-party reimbursement (Note 2)	952,600	887,600
		13,953,127	13,338,820
<i>Fund Balances</i>		26,522,400	24,940,387
Total		\$50,635,212	\$45,478,445
<i>Restricted Funds</i>			
<i>Special Purpose Funds:</i>	Fund balances	\$ 1,678,929	\$ 1,529,569
	Total Special Purpose Funds	\$ 1,678,929	\$ 1,529,569
<i>Endowment Funds:</i>	Accounts payable	\$ 160,490	\$ 94,785
	Mortgage note payable (Note 4)	1,950,708	2,061,131
	Fund balances	5,126,878	4,912,903
Total Endowment Funds		\$ 7,238,076	\$ 7,068,819
<i>Plant Replacement and Expansion Funds:</i>	Fund balances	\$ 71,600	\$ 324,137
	Total Plant Replacement and Expansion Funds	\$ 71,600	\$ 324,137

See notes to financial statements.

Statements of Revenues and Expenses
For the Fiscal Years (52 Weeks) Ended
September 24, 1978 and
September 25, 1977

		1978	1977
Patient Service Revenue		\$59,499,550	\$53,360,416
Less—	Free care, provision for uncollectible accounts, contractual adjustments, etc.	(7,299,716)	(6,301,136)
Net Patient Service Revenue		52,199,834	47,059,280
Other Operating Revenue	(including \$1,304,553 in 1978 and \$1,220,671 in 1977 transferred from special purpose funds) (Note 1)	2,389,408	2,163,471
	Total operating revenue	54,589,242	49,222,751
Operating Expenses:	Professional care of patients:		
	General	11,290,064	10,330,331
	Special	20,584,589	18,445,219
	Household and property	4,084,713	4,001,231
	Dietary	3,308,168	3,031,422
	General services and administration	7,043,111	6,498,420
	Employee benefits	4,526,115	3,858,214
	Depreciation (Note 2)	1,813,318	1,724,408
	Research, etc.	1,304,553	1,220,671
	Interest	542,468	586,156
	Total operating expenses	54,497,099	49,696,072
Gain (Loss) from Operations		92,143	(473,321)
Nonoperating Revenue:	Net income from endowment funds	355,725	312,253
	Donations and other distributions—net	196,614	164,782
	Interest, etc.	317,449	166,775
	Nonoperating revenue	869,788	643,810
Excess of Revenues Over Expenses		\$ 961,931	\$ 170,489

See notes to financial statements.

Statements of Changes in Fund Balances

For the Fiscal Years (52 Weeks) Ended

September 24, 1978 and

September 25, 1977

		Unrestricted Funds	Restricted Funds		
			Special Purpose Funds	Endowment Funds	Plant Replacement and Expansion Funds
<i>Balance, September 26, 1976</i>		\$24,540,231	\$1,296,141	\$4,304,899	\$264,431
<i>Increases (Decreases):</i>	Legacies, gifts, etc. (Note 1)	68,258	202,964	614,628	
	Building fund receipts				188,094
	Grants for specified purposes		1,224,392		
	Investment income		43,265		17,444
	Net loss on sales of investment securities		(945)	(6,624)	
	Excess of expenses over revenues for the year	170,489			
	Transfer to other operating revenue		(1,220,671)		
Total		24,778,978	1,545,146	4,912,903	469,969
<i>Interfund Transfers—</i>	Investment in buildings and equipment	161,409	(15,577)		(145,832)
<i>Balance, September 25, 1977</i>		24,940,387	1,529,569	4,912,903	324,137
<i>Increases (Decreases):</i>	Legacies, gifts, etc. (Note 1)	217,451	221,114	181,561	
	Building fund receipts				118,827
	Grants for specified purposes		1,179,996		
	Investment income		49,906		20,949
	Net gain on sales of investment securities		13,215	32,414	
	Excess of revenues over expenses for the year	961,931			
	Transfer to other operating revenue		(1,304,553)		
Total		26,119,769	1,689,247	5,126,878	463,913
<i>Interfund Transfers—</i>	Investment in buildings and equipment	402,631	(10,318)		(392,313)
<i>Balance, September 24, 1978</i>		\$26,522,400	\$1,678,929	\$5,126,878	\$ 71,600

See notes to financial statements.

**Statements of Changes in Financial
Position of Unrestricted Funds**
For the Fiscal Years (52 Weeks) Ended
September 24, 1978 and
September 25, 1977

		1978	1977
<i>Funds Provided:</i>	Operations:		
	Gain (loss) from operations	\$ 92,143	\$ (473,321)
	Add operating expenses not requiring current use of funds:		
	Depreciation (includes \$61,471 in 1978 and \$61,162 in 1977 charged directly to other operating revenue)	1,874,789	1,785,570
	Increase in deferred third-party reimbursement (Note 2)	65,000	109,200
	Amortization of bond discount	12,335	13,908
	Funds provided from operations	2,044,267	1,435,357
	Nonoperating revenue—net	869,788	643,810
	Total funds provided from operations and nonoperating revenue	2,914,055	2,079,167
	Unrestricted legacies	217,451	68,258
	Transfers from Restricted Funds—net	402,631	161,409
	Decrease in trustee designated funds		289,771
	Construction loan (Note 3)	1,051,972	
	Total funds provided	4,586,109	2,598,605
<i>Funds Applied:</i>	Reduction of long-term debt—Authority (Note 3)	450,000	450,000
	Payments to funds held in trust—net (Note 3)	133,643	176,144
	Additions to property, plant, and equipment	2,636,130	2,290,598
	Increase in trustee designated funds	125,175	
	Total funds applied	3,344,948	2,916,742
<i>Increase (Decrease) in Working Capital</i>		\$1,241,161	\$ (318,137)
<i>Summary of Changes in the Components of Working Capital:</i>	Increase (decrease) in current assets:		
	Cash and invested cash equivalents	\$3,023,852	\$(1,529,995)
	Accounts receivable—net	973,353	1,286,597
	Inventories of supplies	68,412	83,785
	Prepaid expenses, etc.	70,991	(188,012)
	Total	4,136,608	(347,625)
	Decrease (increase) in current liabilities:		
	Accounts payable, etc.	(731,266)	(929,001)
	Accrual for settlements with third-party payors	(2,193,579)	1,063,901
	Deferred nursing school tuition	(35,246)	(10,357)
	Advances from third-party payors	64,644	(95,055)
	Total	(2,895,447)	29,488
<i>Increase (Decrease) in Working Capital</i>		\$1,241,161	\$(318,137)

See notes to financial statements.

Notes to Financial Statements

1. Accounting Policies

General

The accompanying balance sheets of the Hospital are presented in two basic fund accountabilities of unrestricted and restricted funds. Fund balances restricted by outside sources are included in restricted funds and are distinguished from unrestricted fund balances allocated to specific purposes by action of the Board of Trustess (trustee designated funds).

Restricted gifts and grants from restricted resources are added to the appropriate restricted funds. Restricted special purpose funds, when expended for current operating purposes, are transferred to unrestricted funds and are reported as other operating revenue.

It is the consistent policy of the Hospital to consider certain unrestricted legacies received (\$217,451 and \$68,258 in 1978 and 1977, respectively) as capital resources and to credit such receipts directly to unrestricted fund balances. Generally accepted accounting principles for hospitals, as set forth in the Hospital Audit Guide issued by the Committee on Health Care Institutions of the American Institute of Certified Public Accountants, require the reporting of such amounts as nonoperating revenue. Had the aforementioned amounts been so reported, the Hospital would have reported an excess of revenues over expenses of \$1,179,382 in 1978 and \$238,747 in 1977.

Investments

Investments are stated at cost or, if received by gift or bequest, at fair market value when received. Substantially all of the Hospital's investments are included in an investment pool which is operated on the "market-value" method whereby each participating fund is assigned a number of units based on the market value of the assets of the pool at the time of entry of the fund into the pool. Income of the pool is allocated to participating funds based on their respective shares of the pool.

Estimated Settlement with Third-Party Payors

Preliminary calculations of final cost reimbursement adjustments relative to third-party contracts with Blue Cross and Medicare are

reported in the accompanying balance sheet as a current liability. Cost reports to be filed for the current year, as well as Blue Cross cost reports filed for 1977 and 1976 and the Medicare cost report filed for 1977, are subject to final determination by the reimbursement agency under each program. Variances between preliminary calculations and final settlements are included in the statement of revenues and expenses in the year in which the settlements occur.

Other

Other significant accounting policies are set forth in the financial statements or in the notes which follow.

2. Property, Plant, and Equipment

Property, plant, and equipment of unrestricted funds are stated at cost less accumulated depreciation and are summarized as follows:

	1978	1977
Land	\$ 640,846	\$ 640,846
Buildings	18,926,673	19,010,712
Fixed equipment	19,647,377	19,055,099
Major movable equipment	9,373,601	8,521,027
Construction in progress	1,155,131	
Total	49,743,628	47,227,684
Less accumulated depreciation	(16,775,742)	(15,021,139)
Property, plant, and equipment—net	\$ 32,967,886	\$ 32,206,545

Depreciation is computed using the straight-line method over the estimated useful lives of depreciable assets. As to certain depreciable assets acquired before 1971, the Hospital uses accelerated depreciation methods to determine the reimbursable costs under a third-party reimbursement agreement. The revenue attributable to the excess of accelerated over straight-line depreciation is deferred and will be added to income when the depreciation timing differences reverse. Revenue thus deferred for 1978 and 1977 amounted to \$65,000 and \$109,200, respectively.

3. Long-Term Debt

On November 8, 1973, the Massachusetts Health and Educational Facilities Authority (the Authority) sold \$14,900,000 principal amount of revenue bonds, designated New England Deaconess Hospital Issue, Series A, and loaned the proceeds therefrom to the Hospital. With certain exceptions, principally the Medical Office Building and Kennedy Hall, all of the Hospital's land and buildings

(including contents) are pledged as collateral in connection with the mortgage conveyed by the Hospital to the Authority. The Hospital has also granted to the Authority a first lien on certain defined gross receipts (including related accounts receivable) as additional security for payment of the mortgage.

The mortgage agreement provides for payment, to funds held in trust, of an initial deposit of principal and interest and subsequent monthly payments in amounts proportionate to the Authority's (a) annual principal payments on sinking fund instalments, ranging from \$450,000 in 1979 to \$525,000 in 2005 and (b) semiannual interest payments at rates varying from 4.75% to 5.7% over the lives of the bonds.

During the current year the Hospital obtained a commitment from a bank to finance the expansion of existing parking facilities, the cost of which is expected to approximate \$2,000,000. Under the terms of this agreement, interest on the outstanding debt, which is due March 29, 1983, is payable monthly at a rate of 1% in excess of the bank's prime lending rate. The bank's prime rate at September 24, 1978 was 9.5%. This agreement is secured by a mortgage on the parking garage addition and a lien on defined garage facility net income.

Long-term debt at year end is summarized as follows:

	1978	1977
Authority	\$13,100,000	\$13,550,000
Less unamortized discount	198,845	211,180
Net	12,901,155	13,338,820
Construction loan	1,051,972	
Total	\$13,953,127	\$13,338,820

4. Endowment Funds Mortgage Note Payable

The endowment funds mortgage note bears interest at 5¼% and is payable in monthly instalments through January 1991, including, at September 24, 1978, \$120,000 due within

one year. The Medical Office Building is assigned as collateral under the terms of this mortgage.

5. *Employees' Retirement Plan*

The Hospital has a noncontributory defined benefit retirement plan covering all employees working 1,000 hours or more per year. Total pension expense aggregated \$1,700,000 in 1978 and \$1,382,000 in 1977 including, in both years, amortization over a forty-year period of the unfunded actuarially computed past service liability. Such unfunded liability approximated \$7,400,000 as of October 1, 1977, the last plan valuation date. The actuarially computed value of vested benefits under the plan as of the last plan valuation date exceeded the total of the pension fund net assets and balance sheet accruals by approximately \$1,600,000.

6. *Malpractice and Comprehensive Liability Insurance*

Effective April 1, 1976, the Hospital changed its malpractice and comprehensive liability insurance coverage from an occurrence basis policy to a claims-made policy. The claims-made policy, which is subject to renewal on an annual basis, covers only claims actually made during the term of the policy, but not those occurrences for which claims may be made after expiration of the policy.

7. *Trust Funds Held by Others*

The Hospital is a beneficiary of a non-discretionary trust held by others which is not reported on the accompanying balance sheets. The quoted market value of the Hospital's share of trust assets was \$1,800,000 at September 24, 1978 and \$1,797,200 at September 25, 1977. The Hospital received distributions of income from the trust of \$95,000 in 1978 and in 1977.

New England Deaconess Hospital:

We have examined the balance sheets of New England Deaconess Hospital as of September 24, 1978 and September 25, 1977 and the related statements of revenues and expenses, changes in fund balances, and changes in financial position of unrestricted funds for the fiscal years (52 weeks) then ended. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

As more fully described in Note 1 to the financial statements, it is the consistent practice of the Hospital to record certain unrestricted legacies received as credits directly to unrestricted fund balances. In our opinion, generally accepted accounting principles require that such legacies be reported as nonoperating revenue.

In our opinion, the financial statements referred to above present fairly the financial position of the Hospital at September 24, 1978 and September 25, 1977 and, except for the effects of the accounting policy referred to in the preceding paragraph, the results of its operations, changes in its fund balances, and changes in the financial position of its unrestricted funds for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

Deloitte Haskins & Sells
Boston, Massachusetts
November 17, 1978

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